BACILLUS PROTEUS SEPTICEMIA*

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BLOOD-STREAM infections due to *Bacillus proteus* are uncommon, only ten cases having been reported in the literature. Infections of the urinary tract due to this organism, however, are less rare. Kretschmer and Mason[1] of the Presbyterian Hospital in Chicago showed that, out of three hundred and five consecutive urinary-tract infections, other than tuberculosis, eight cases showed this bacillus in pure culture, and in twelve cases where more than one organism was recovered.

In reviewing the literature of *Bacillus proteus* septicemia, Kretschmer and Mason[1] reported two cases, one patient having a stone in the kidney and the other having renal tuberculosis with a small stone in the pelvis of the kidney. Both of these cases recovered.

Warren and Lamb[2] cited a case in which their patient had, besides the proteus septicemia, pulmonary tuberculosis, myelogenous leukemia, and Vincent's angina.

Kernan[3] made mention of two cases in which the organism was recovered from the blood following ear and throat complications. One patient's illness began as a peritonsillar abscess, terminating fatally as a sinus thrombosis and meningitis; the other patient's illness apparently started with a discharging ear, progressing to a lateral sinus thrombosis and death.

In the following two cases to be reported, one patient had a suprapubic prostatectomy performed for relief of prostatic hypertrophy, and the other an anterior urethral stricture.

REPORT OF CASES

CASE 1.—F. V., a Portuguese laborer, age sixty-eight years, entered Fairmont Hospital on February 5, 1924, with a complaint of inability to urinate. Past history was essentially negative and the family history irrelevant. He dates his present illness to about two years before entry; at that time he began to notice slowing of the urinary stream, hesitancy and nocturia, gradually progressing to acute urinary retention. He was catheterized by a private physician a few times and then entered the hospital.

Physical Examination.—The patient was a well-preserved male, not appearing ill. Head, neck, and lungs were normal. There was a presystolic murmur over the apex and a slight thrill felt over this area. There were no abdominal organs palpable, no masses, tenderness or rigidity felt. Extremities were negative, and the reflexes physiologic. Rectal examination revealed a moderately enlarged, well circumscribed, simple hypertrophied prostate. A No. 18 soft-rubber catheter was passed with difficulty and 150 cubic centimeters of hazy urine withdrawn. The catheter was left in place for drainage and irrigation in preparation for prostatectomy.

Cystoscopic Examination.—On February 9 a cystoscopic examination was done which showed a lateral lobe hypertrophy of the prostate; bladder walls were markedly trabeculated; no ulcers, tumors, stones, or diverticuli were seen. Ureters were not catheterized.

Laboratory Findings.—Hemoglobin, 90 per cent; white blood cells, 12,900; with 74 per cent polymorphonuclear cells, 14 per cent small lymphocytes, 6 per cent large lymphocytes, and 6 per cent eosinophils. The blood Wassermann was negative. Chemical analysis of the blood showed blood urea 19.8 milligrams per cent. Phenosulphophthalein test was 40 per cent the first hour, 20 per cent the second hour, totaling 60 per cent for the two hours. Urinalysis showed: reaction alkaline; albumen, + + +; sugar-negative; red blood cells +; and pus cells + + +.

Operation.—A one-stage suprapubic prostatectomy was performed on February 14, 1924, under caudal and regional anesthesia. There was little bleeding, the patient leaving the table in good condition.

Postoperative Progress.—The patient's temperature rose the following day and stayed elevated, although fluctuating, until February 26. At this time a periurethral abscess was opened and drained. His general condition was good, he was taking fluids well, and relishing his food. His temperature remained practically normal for one week, when it again rose to 101 degrees Fahrenheit. The usual supportive treatment of intravenous glucose, saline, etc., was administered. A note on March 11, read: "Chest negative, no tenderness over kidneys, wound granulating slowly, rectal examination negative, peri-urethral fistula not draining." On March 16 the patient had a severe chill and a phlebitis of the left leg was noted. Blood was taken for culture and reported positive for *Bacillus proteus*. Twenty cubic centimeters of one per cent mercurochrome was administered intravenously daily for five days. Although the fluid intake and the urinary output were good, the patient became increasingly more toxic, the pulse rising to 120 to 130. The patient expired of myocardial insufficiency on March 26, 1924. No autopsy was performed.

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CASE 2.—W. J., a male negro, age seventy-five, entered on the urologic service of Highland Hospital on February 25, 1932, with a complaint of difficult and painful urination. As the patient was senile no reliance could be placed on his answers to questions pertaining to his past history. His present illness dates back to about five months before entry, when he began to experience increasing difficulty on urination with frequency and nocturia three to four. About one month following apparent onset, he noticed marked burning on urination with occasional chills, but he was not aware of any fever associated with the chills.

Physical Examination.—The patient was poorly nourished, complaining of pain over the bladder. There were many coarse râles at the bases of both lungs

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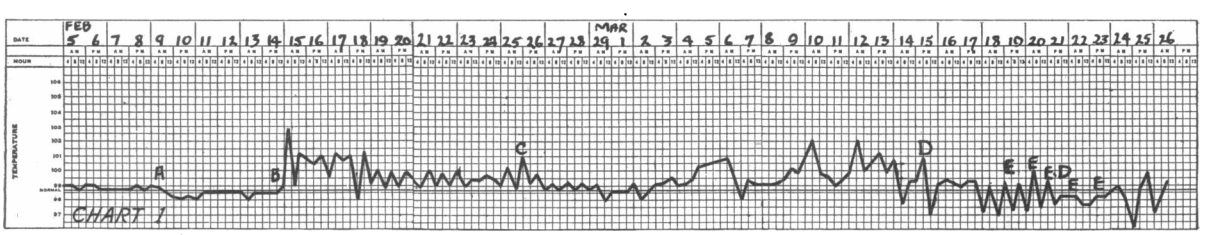

Chart 1.—A, cystoscopy; B, operation; C, periurethral abscess drained; D, positive blood culture; E, intravenous mercurochrome.

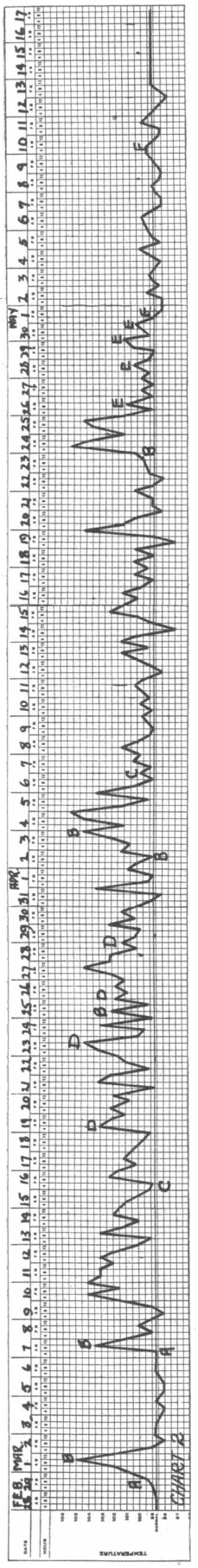

Chart 2.—A, stricture dilated; B, chill; C, blood culture positive; D, intravenous mercurochrome; E, intravenous sodium ricinoleate; F, negative blood culture.

posteriorly. Heart was negative. On abdominal palpation there was no rigidity. Liver and spleen were not palpable. The bladder rose to about three fingerbreadths above the symphysis pubis. Rectal examination revealed a tight sphincter; prostate was normal in size, well outlined and tender, prostatic massage yielded about 40 per cent pus. Extremities negative and reflexes sluggish but present. On an attempt to pass a catheter a stricture was met distal to the bulbous urethra. A filiform was passed to the bladder, and the stricture was dilated to number 24 F. Moderate bleeding followed. A No. 16 soft-rubber catheter was inserted for continuous drainage and irrigation, as the urine was turbid and of a strong odor.

Laboratory Findings.—Hemoglobin 95 per cent; white blood cells, 13,700; polymorphonuclears, 67 per cent; small lymphocytes, 31 per cent; large lymphocytes, 2 per cent. Blood chemistry: Blood urea, 14 milligram per cent. Urinalysis: Specific gravity, 1013; reaction alkaline; albumen, +++; sugar-negative; pus cells +++; bacteria, +++. No culture made. Wassermann was negative.

Course in Hospital.—Four hours following the dilatation of the stricture, the patient had a chill and the temperature rose to 104 degrees Fahrenheit, subsiding the following day to normal. Six days later the stricture was again dilated, the resultant chill lasting twenty minutes, the temperature rising to 103.4 degrees Fahrenheit and remaining elevated for the following fifty-five days, ranging from 99 to 104 degrees Fahrenheit. The usual supportive treatment of intravenous glucose and subcutaneous saline was instituted. Blood for culture taken on March 16 was positive for *Bacillus proteus.* Fifteen cubic centimeters of one per cent mercurochrome was administered intravenously on March 19, 23, 26, and 29, without an appreciable alteration in the septic swing of the temperature. On April 7 the blood culture was still positive for *Bacillus proteus,* and the hemoglobin, which on entry was 95 per cent, dropped to 52 per cent. The patient at this time appeared very toxic, weak and failing. By April 21 the hemoglobin was 29 per cent, but the patient was still coöperating in taking fluids and nourishment. On April 26, 200 cubic centimeters of 0.1 per cent sodium ricinoleate was administered intravenously, and within twelve hours the patient remarked that he felt better. For four consecutive days the same amount of 200 cubic centimeters of 0.1 per cent sodium ricinoleate was again administered and from then on the patient exhibited a remarkable recovery.

A blood culture taken April 30, four days after the first intravenous injection of the sodium ricinoleate, was negative and the temperature remained practically normal except for slight rises, which could be attribute to the infected bladder. The patient's hemoglobin rose to 40 per cent on May 11, and to 50 per cent on May 23. The patient has been ambulatory since May 10. He was discharged, to continue the treatment for dilation of the urethral stricture.

SUMMARY

1. Two cases of *Bacillus proteus* septicemia are reported, one ending fatally.

2. The rarity of this type of septicemia is stressed; chronic debilitating infections and decreased resistance are evident predisposing causes.

3. One case has apparently recovered following the intravenous use of sodium ricinoleate.

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DRESSINGS OF INGUINAL OPERATIVE WOUNDS IN INFANTS

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DRESSING of the operative wound following the repair of an inguinal hernia in an infant is always a problem. It is practically impossible to maintain a gauze dressing in place without it becoming contaminated.

The following dressing is, I believe, superior to most dressings. The edges of the skin wound are approximated by small Michel clips which are first dipped in compound tincture of benzoin. The clips are placed with just enough pressure to approximate the skin edges. The wound and clips are now coated with a thick, gummy layer of compound tincture of benzoin. This gummy consistency is obtained by allowing the compound tincture to evaporate in an open container until a molasses consistency is reached.

The nurses are instructed to paint over this layer of compound tincture of benzoin with the ordinary compound tincture of benzoin daily. On the fifth or sixth day the dressing is loosened with alcohol, and the clips are removed. It is usual to find a well-healed, firm scar, without any evidence of infection.

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